THE PARTY OF THE P

KUZNETSOV, A.I.

In reference to the letters about and reviews of A.I. Kusnetsov's book "Safety measures for electric installations." Blek.sta. 28 no.12: 83-84 D '57. (NIRA 12:3) (Electric engineering--Safety measures)

AUTHOR:

Kuznetsov, A. I.

94-13-7-22/25

TITLE:

The Values of Charge and Discharge Currents in Alkali Batteries . (O velichine zaryadnogo i razryadnogo toka

v shchelochnykh akkumulyatorakh)

PERIODICAL: Promyshlennaya Energetika, 1958, Vol 13, Nr 7, p 38 (USSR)

ABSTRACT:

This note is in reply to a question from B. V. Barabash of Krasnoyarsk who asks how the current value influences chemical processes in alkali chatteries and what is it that governs charge and discharge currents. In reply it is stated that the chemical processes that occur in alkali batteries are not fully understood but this is not of great practical importance. It is the practical consequences of using the right currents that matter. The charging current of an iron-nickel . battery should be a quarter of the rated discharge current. If the charging current is less than this the discharge capacity of the battery will be reduced. Charging currents up to half the rated discharge current may be used but care must be taken to prevent overheating. If the electrolyte temperature rises to 40°C, there is

Card 1/2

94-13-7-22/25
The Values of Charge and Discharge Currents in Alkali Batteries

considerable loss of battery capacity. If the battery is fully discharged every time, its life will be reduced.

Card 2/2 1: Alkaline batteries - Electrical factors 2. Alkaline batteries - Maintenance 3. Alkaline batteries - Properties

MENSHCHIKOV, I.I.; KUZNETSOV, A.I., kand. tekhn. nauk, retsenzent; KULESHOV, A.P., Inzh., red.

[Electrical safety measures in the machinery industry] Elektrobezopasnost' v mashinostroenii. Moskva, Izd-vo "Mashinostroenie," 1964. 186 p. (MIRA 17:7)

KUZMETIOV, A.I. inch.

Self-discharge of storage batteries. Prom. energ. 19 no.31:45-47 N '64. (MERA 18:1)

BSSR/Cultivated Plants. Potatoes. Vegetables. Melons.

Abs Jour: Ref Zhur-Biol., No 5, 1958, 20309.

Author : A.I. Kuznetsov.

: Not given. Inst

: Fertilizing Early Potatoes on an Occupied Fallow. (Udobreniye Title

rannego kartofelya v zanyatom paru).

Orig Pub: Udobreniye i urozhay, 1957, No 5, 42-45.

Abstract: The application of N_{3O}P_{liO}K_{liO} on the early Eperon potato in the loamy soils of Ramenskiy Rayon in Moscow Oblast' on a manure base (20 tons per hectare) raised the yield of tubers by 50 centners per hectare; of these almost 30 centners per hectare were through nitrogen fertilizers. In other tests on loamy and sandy soils N₃₀ applied during planting as well as in supplemental feeding yielded on a base of manure 20 tons per hectare plus P40K40 an equal

: 1/2 Card

USSR/Gultivated Plants. Potatoes. Vegetables. Melons.

Abs JourAPRROVED HOR, RELEASE, 69643942000 CIA-RDP86-00513R000928110014

> harvest boost (15-25%); in this same test the use of N60 was particularly effective when applied in half dosage while planting, with the other half as side dressing.

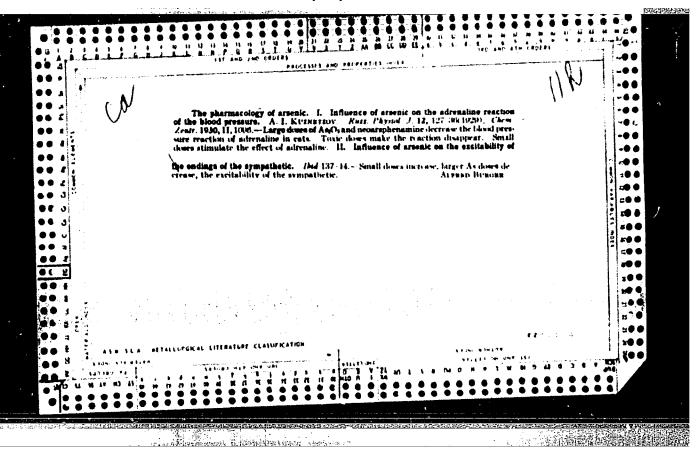
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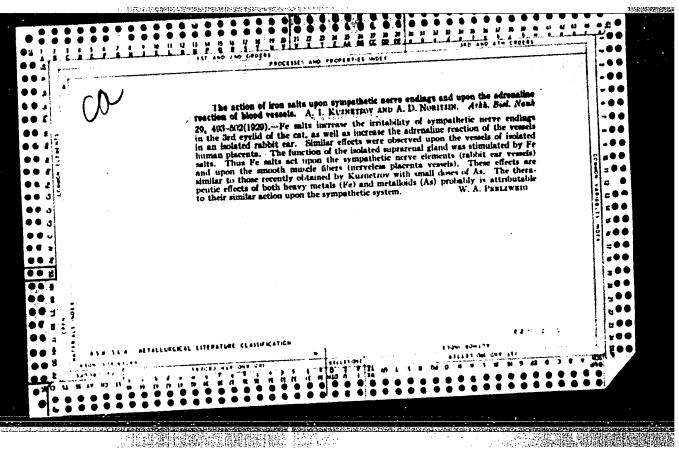
how in whack, Mil.

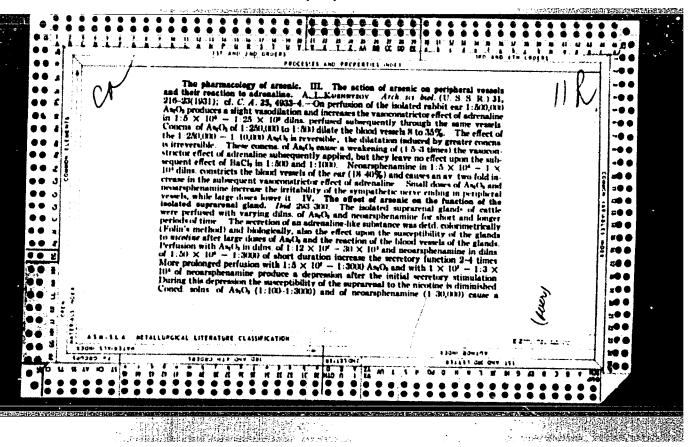
KUZNETSOV, A. I., Cand Agr Sci -- (diss) "Some problems in the fertilization of early potatoes planted in sod-podsolic soils of the non-chernosem zone." Moscow, 1960. 15 pp; (Moscow Order of Lenin Agricultural Academy im K. A. imiryazev); 150 copies; price not given; (KL, 17-60, 163)

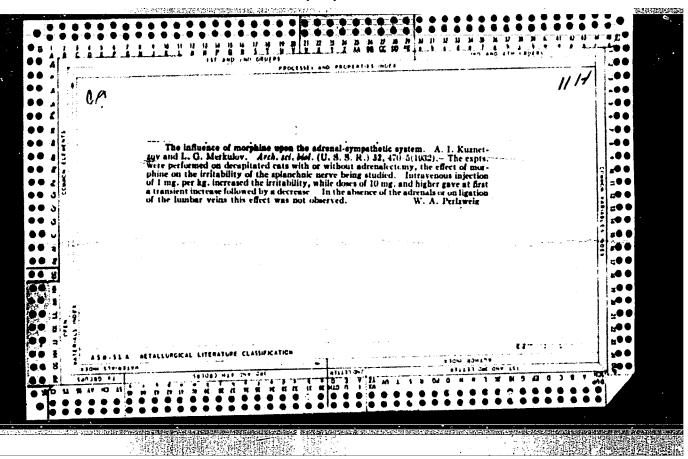
KUZNETSOV, Aleksandr Ivanovich [Early potatoes in green fallow]Ramnii kartofel' v zaniatom paru. Moskva, Izd-vo M-va sel'.khoz.RSFSR, 1961. 57 p. (MIRA 15:10) (Fallowing) (Fotatoes)

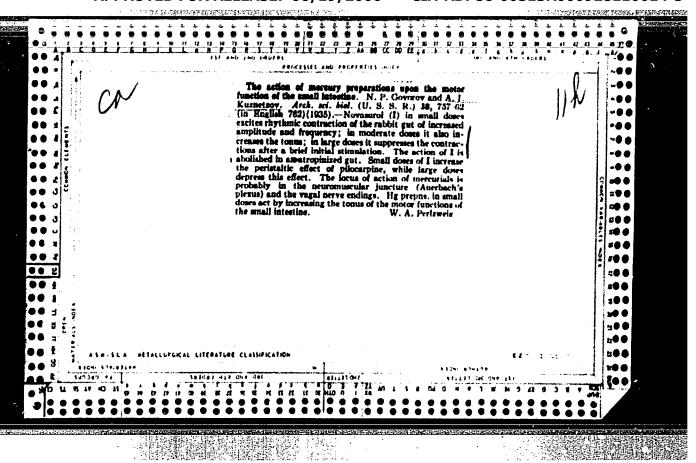
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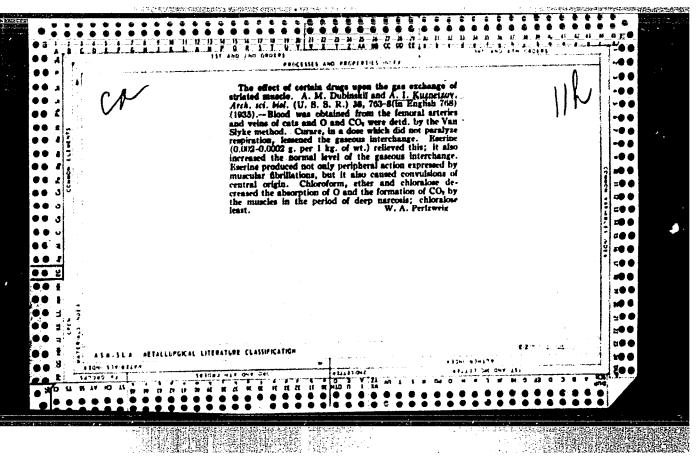


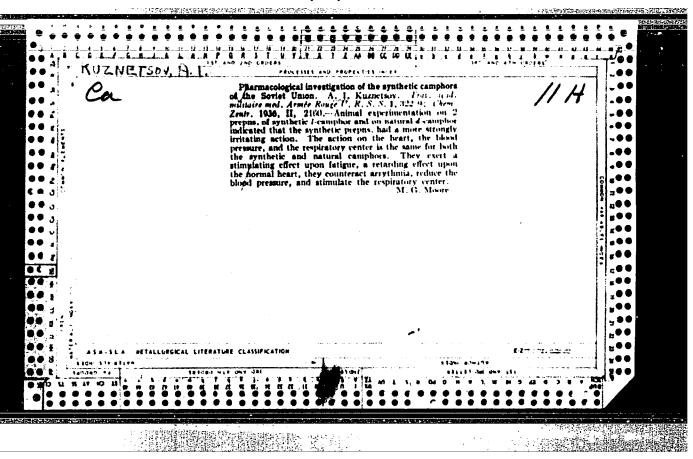


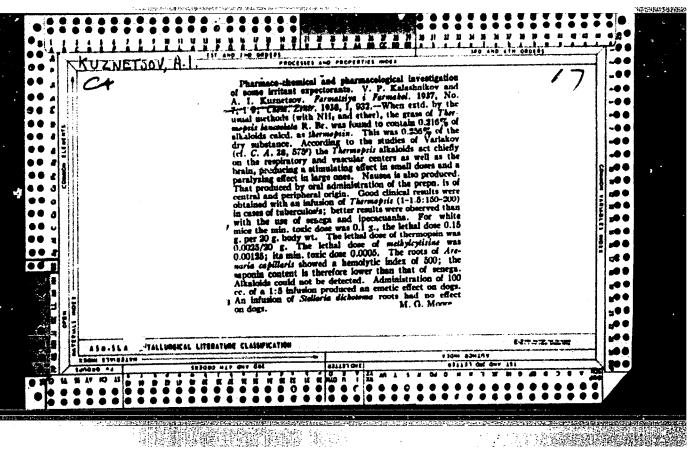


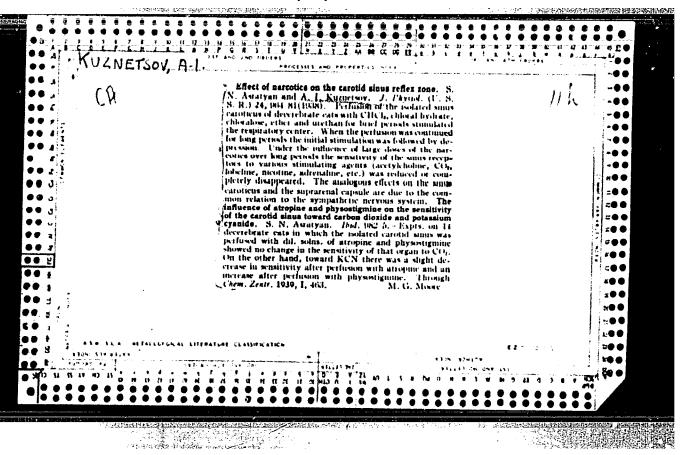


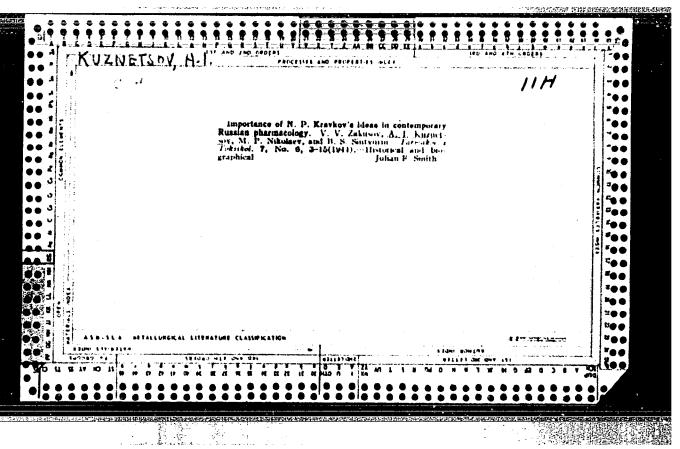


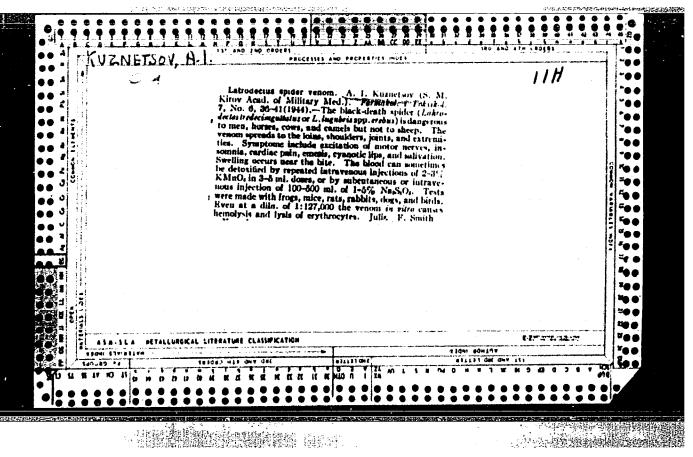












KUZNETSOV, A. I.

Pharmacological properties of ammodendrine. S. N. Asratyan, V. N. Kovalenko, A. I. Kuznetsov, and P. P. Saksonov. Farmakol, i Toksikol, 9, No. 3, 12-20 (1946).-- Ammodendrine (I), an alkaloid from Ammodendron conollyi leaves (Orekhov and Proskurnina, C.A. 32, 29438), is apparently an acetyltetrahydroanabasine. Its general effects and toxicity were studied with cats, rabbits, mice and frogs, with isotonic NaCl soln. in vivo and Ringer-Locke soln. in isolated organs. In vertebrates I stimulates and then depresses the central nervous system; the first stage is fleeting or absent in rabbits, mice, and frogs. Though initially a respiratory stimulant, I kills mammals by respiratory paralysis; the heart stops in diastole. Animals vary in their sensitivity to I according to their phylogenetic development; cats were most sensitive, frogs least so. The pressor or depressor effect of I depends on the vascular tonus. Repeated injections of I at short intervals exert tachyphylactic effects on blood pressure and respiration; examples include intravenous injection of I in doses up to 0.03 mg./g., repeated at intervals of less than 15 min., in decerebrated cats and cats under chloral narcosis. As compared with ganglion poisons like nicotine and anabasine, I has low toxicity. The av. lethal dose for mice is 0.385 mg./g. No myotropic effects were observed. Tests with isolated cat and frog hearts show no significant cardiac action. Tests with intestinal and uterine smooth muscle from rabbits, -guinea pigs, and mice show only slight activity. Julian F. Smith

KUZNETSOV. A.I. professor.

V.V.Savich as a pharmacologist. Farm.i toks. 10 no.1:3-17
Ja-F '47.

(Savich, Vladimir Vasil'evich, 1874-1946)

Travalation M-300, 30 Mar 55

KUZNETBOV. A.I.

23607

DEYSTVIYO FENAMINA NA TSENTRAL'NUYU NERVNUYU SISTEMU. SBORNIK NAUCH. TURDOV (LENINGR. VET. IN-T), VYP. 10, 1949, C. 5-8.

SO: LETOPIS' NO. 31, 1949.

MEN'SHAKOV, P.G.; KUZNETSOV, A.I., prof., red.; CHUBINSKIY, V.V., red.; KRAYUKHIN, G.N., tekhn.red.

[Veterinary pharmacology] Veterinarnaia farmakologiia. Pod red.A.I.Kuznetsova. Moskva, Gos.ind-vo sel'khoz.lit-ry, 1949.
344 p. (MIRA 13:1)
(Veterinary materia medica and pharmacy)

KUZNETSOV, A.I.

On the problem of the codeine habit. Zhur.nevr. i psikh. Supplement: 65 '57. (HIRA 11:1)

1. Kefedra psikhiatrii (zav. - prof. M.P.Kutanin) Saratovskogo meditsinskogo instituta.

(CODMINM) (NARCOTIC HABIT)

4151

MALKINA, H.O.; KUZNETSOV, A.I.

Thermoregulatory reflex as an indication of impairment of thermoregulation in schizophrenia [with summary in English]. Zhur.vys. nerv.deiat. 8 no.1:36-41 Ja-F 158. (MIRA 11:3)

1. Kafedra psikhiatrii Saratovskogo gosudarstvennogo meditsinskogo instituta.

(SCHIZOPHRENIA, physiology,

CHIZOPHRENIA, physiology, thermoregulating reflex as index of temperature disorders in schizophrenia. Zhur.vys.nerv.deiat. 8 no.1:36-41

Ja-F 158. (MIRA 11:3)

KUZNETSOV, A.I.

Pathophysiology of chronic alcoholism. Trudy Semipal. med. inst. 2:242-253 '59. (MIRA 15:4)

1. Kafedra psikhiatrii Semipalatinskogo gosudarstvennogo meditsinskogo instituta (zaveduyushchiy kafedroy dotsent V.V.Lastovetskiy).

(ALCOHOLISM)

KUZNETSOV, A.I.

Disturbance of hidrotic reactions in chronic alcoholism. Zdrav. Kazakh. 21 no. 4:44-49 161. (MIRA 14:4)

l. Iz kafedry psikhiatrii i kafedry patfiziologii (zav. - doktor meditsinskikh nauk T.A. Nazarova) Semipalatinskogo meditsinskogo instituta.
(ALCOHOLISM)

(PERSPIRATION) (REFLEXES)

KUZNETSOV, A.I.

Case of adenoma of the pancreas with psychic disorders. Zhur. nevr. i psikh. 62 no.3:409-412 162. (MIRA 15:3)

1. Psikhonevrologicheskaya bol'nitsa (glavnyy vrach Ye.N. Marushchak) Komsomol'ska-ma-Amure. (PANCREAS—TUMOR) (HYPOGLYCEMIA) (PSYCHOSES)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000928110014-5"

KUZNETSOV, A.I. (Semipalatinsk)

Results of using aminazine in alcoholic abstinence (symptom) and its effect on thermoregulating reactions. Trudy Gos. nauch.-issl. inst. psikh.38:360-367 *63. (MIRA 16:11)

KUZNETSOV, A.I.; SIMONOV, D.A. Automatic machine-part production counters on automatic lathes and other metal-cutting machines. Priborostroenie no.9:11 8 '56. (MLRA 9:10) (Counting devices) (Machinery, Automatic)

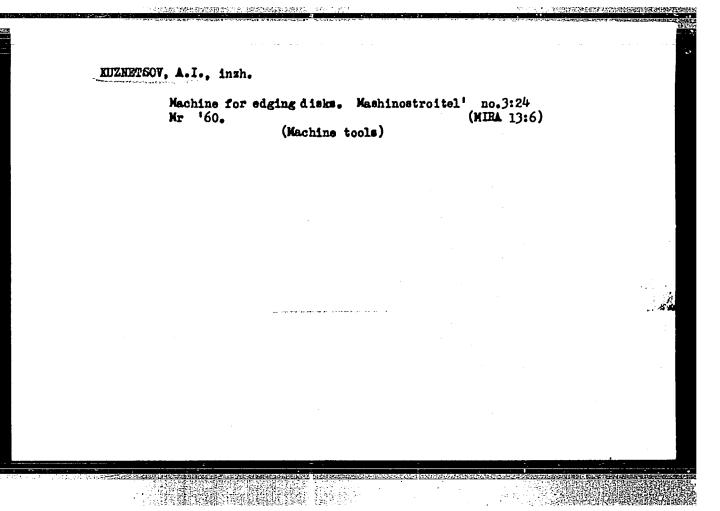
KUZNETSOV, A.I., inzhener; CHECHEYLYUK, Ya.Z., inzhener.

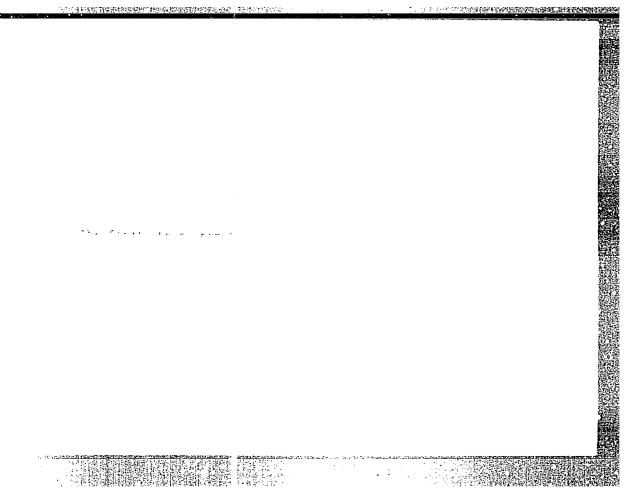
Automatization of the opening and closing of gates using mechanisms with pneumatic cylinders. Mashinostroitel' no.7:43-44 Jl '57.

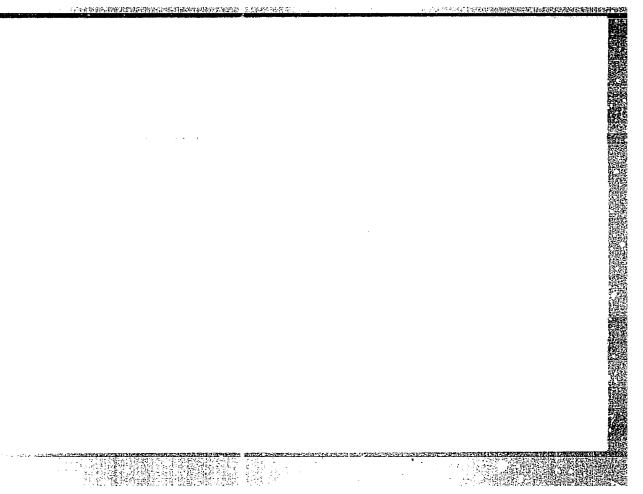
(Pneumatic machinery) (Automatic control) (MERA 10:8)

Machine for wanipulating large-size pieces. Izobr. v SSSR 3 no.2:16
F '58.

(Machine-shop practice)







PANCHENKOV, G.M.; KUZNETSOV, A.I.; MAKAROV, A.Y.

Possibility of separating nitrogen Isotopes by the chemical exchange method using complex formation. Dokl. AN SSSR 164 nc.5:1101-1103 0 165. (MIRA 18:10)

1. Moskovskiy gosudarstvennyy universitet. Submitted March 6, 1965.

KUZNETSOV, A.I., inzhener-stroitel'.

والمراجع والمناجع والمناجعة والمنافعة والمنافعة والمنافعة

Insure preservation of plans and specifications of buildings and installations. Gor.khos.Mosk. 28 no.9:32 5 '54. (MLRA 7:10) (Architecture-Designs and plans)

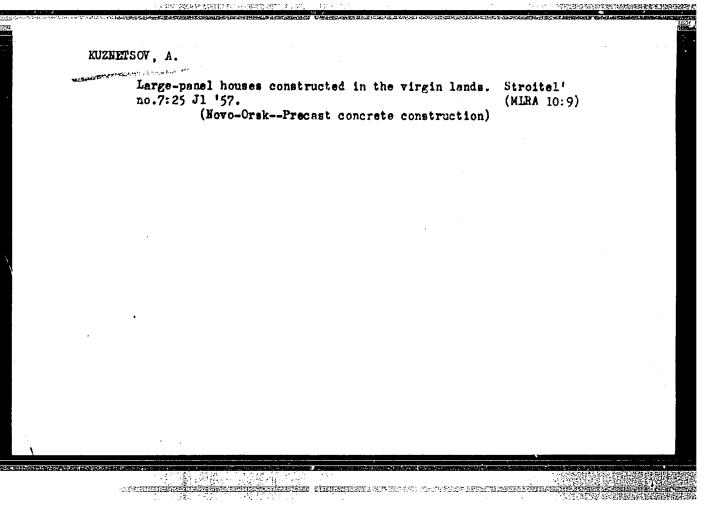
KUZNETSOV, H. I.

STRAMENTOV, Andrey Tevger'yevich, doktortekhnicheskikh nauk, professor;
BAKUTIS, V.E., kandidat tekhnicheskikh nauk, dotsent, redaktor;
KUZNETSOV, A.I., arkhitektor, redaktor; FRIDENRG, G.V., inzhener,
redaktor; USTRUGOVA, N.L., arkhitektor, redaktor; PERSON, M.N.,
tekhnicheskiy redaktor

[Engineering problems in city planning] Inshenernye voprosy planirovki gordov. Moskva, Gos. izd-vo lit-ry po stroit. i arkhit.,
1955. 361 p. (MLRA 8:6)
(Municipal engineering) (City planning)

BOBRYSHEV, P.; KUZNETSOV, A. Vilnius. Stroitel 2 no.8:5-7 Ag 156. (Vilnius-Building) (MLRA 9:12)

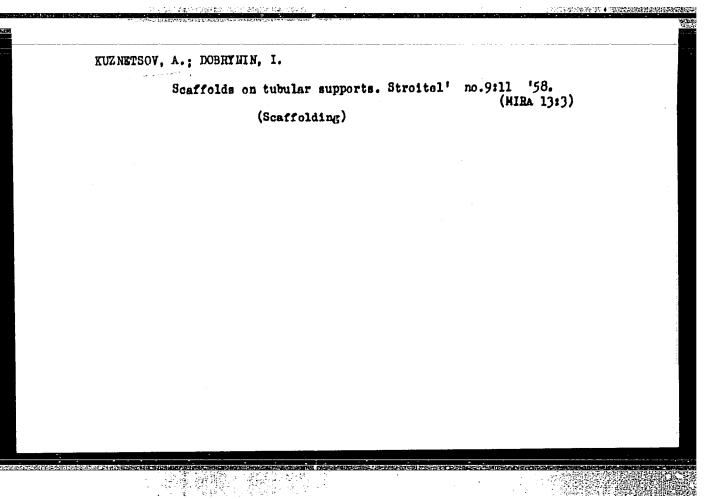
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Concrete construction combines. Biul.tekh.-ekon.inform. no.5:37-39
(MIRA 11:7)
158.

(Prestressed concrete construction)

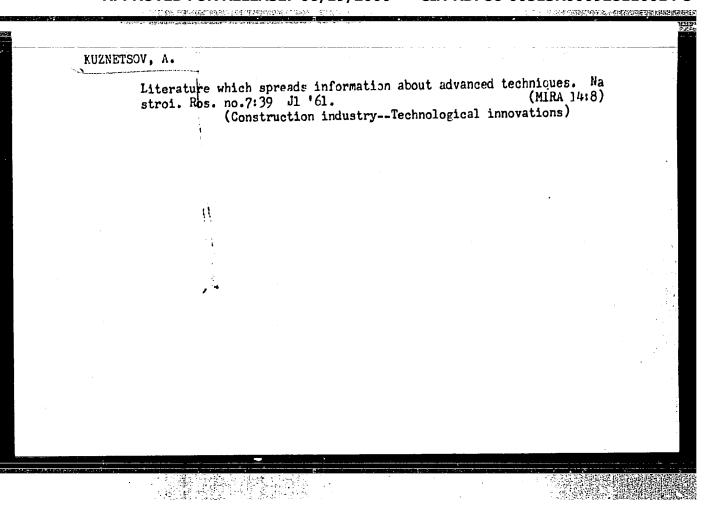
APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000928110014-5"



ANDROHOV, G.A.; BORDUKOV, I.V.; KUZHETSOV, A.I.

Improve the quality and importance of regional planning projects. Prom. stroi. 38 no.4:2-5 '60. (MIRA 13:8)

- 1. Ministerstvo kommunal'nogo khomyaystva SSSR (for Andronov). 2. Gosstroy SSSR (for Bordukov). 3. Giprogor (for Kusnetsov). (Regional planning)



CIA-RDP86-00513R000928110014-5" APPROVED FOR RELEASE: 06/19/2000

t 47098-56 EWT(d)/EWP(1) IJP(c) BB/GG

ACC NR: AR6016013

SOURCE CODE: UR/0271/66/000/001/A009/A009

AUTHOR: Kuznetsov, A. I.; Shamayev, Yu. M.

413

TITLE: Analysis and synthesis of circuits containing magnetic cores with a rectangular hysteresis loop and reactive elements

SOURCE: Ref. zh. Avtomat. telemekh. i vychisl., tekhn., Abs. 1A54

REF SOURCE: Tr. Mosk. energ. in-ta. vyp. 60, ch. I. 1965, 63-82

TOPIC TAGS: magnetic core, hysteresis loop, capacitor

ABSTRACT: Rectangular hysteresis loop cores are generally used for storage of information, while reactive elements (capacitors, inductors) are connected to the loop couplers between the cores and used for the delay of signals. Processes occurring in the circuit during charge of capacitance through the resistor and core winding and during core magnetic reversal from the capacitance discharged through the resistor are studied. It is demonstrated that in this circuit processes are characterized by nonlinear differential equations which can be quite accurately

Card 1/2

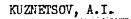
UDC: 62-523:681.142.672

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the propert	ad methods of C	tions. Experime calculation are g . [Translation o	ental results confir iven. Orig. art. h of abstract]	WD 1 0 122-1	acy of ons and [DW]
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KUZNETSOV, A.I.; SHAMAYEV, Yu. M.

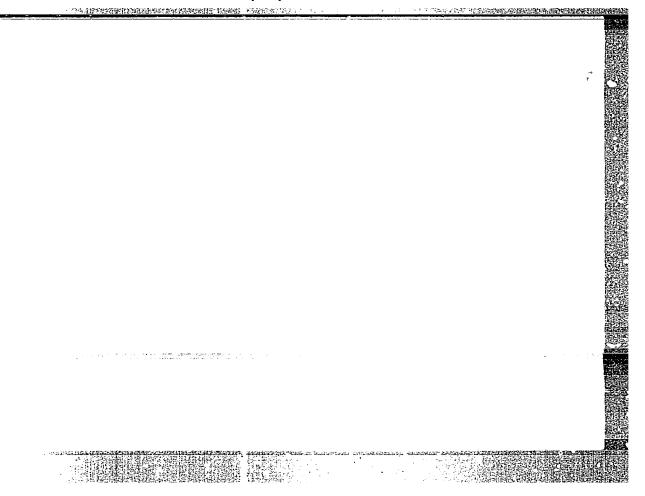
Analysis and synthesis of networks containing magnetic cores with rectangular hysteresis loops and reactive elements.

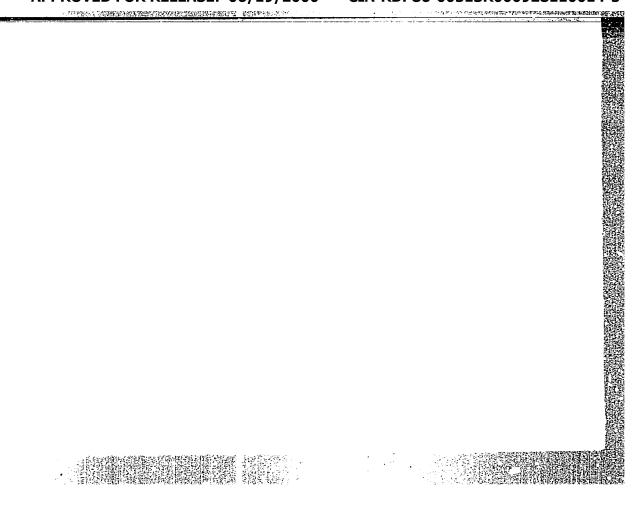
Trudy MEI no.60 pt.1:63-82 '65. (MIRA 19:1)

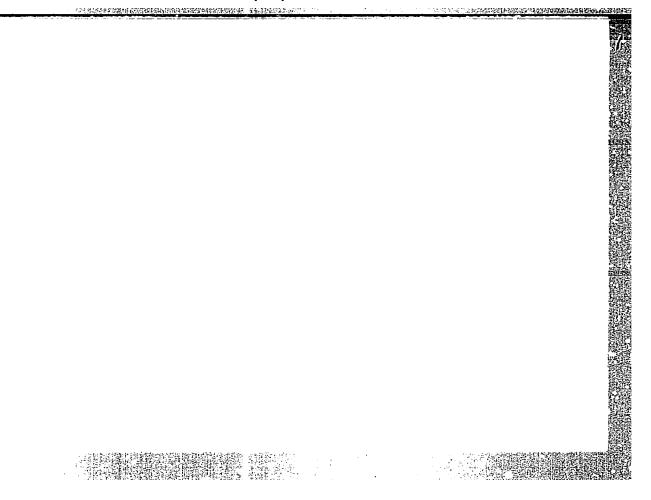


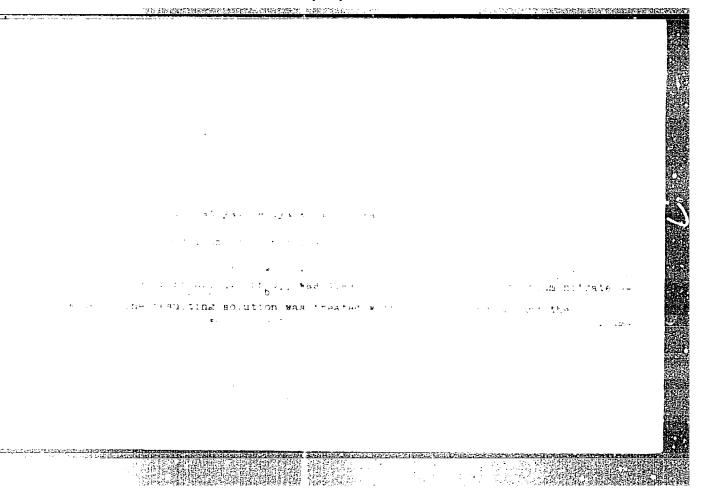
Analysis and design of a passive ferrite-condenser shift register with regulated discharge circuit. Trudy MEI no. 60 no. 3:83-98 *65 (MIRA 19:1)

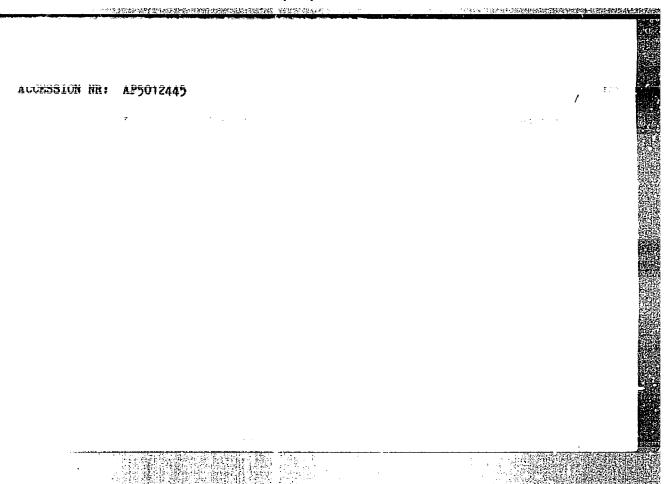
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KUZNETSOV, A.K.; SHIFMAN, M.Ye.; KONONOVICH, I.G.; YEVDOKIMOV,

Brief reports. Zav.lab. 23 no.7:878-879 157.

(MLRA 10:8)

1. Kiyevskiy mekhanicheskiy zavod for Shifman, Kononovich)
2. Institut obshchey i neorganicheskey khimii Akademii nauk
SSSR (for Yevdokimov)
(Laboratories—Apparatus and supplies)

KUZNETSOV, A. K. Thick gypsum bandage in injuries to the extremities of horses.

Source: Veterinariya; 22; 6; June 1945 uncl
TABCON

KUZNETSOV, A.K., detsent (Leningrad)

Nevecaine block for skin receptors in surgical diseases.

Veterinariia 32 no.1:68-73 Ja *55. (MIRA 8:2)

(HOVOCAINE) (VETERINARY SURGERY) (HORSES--WOUNDS AND INJURIES)

KUZNETSOV, A.K., (Docent, Leningrad Veterinary Institute).

"Novacain-penicillin therapy in surgical diseases..."

Veterinariya, vol. 39, no. 3, March 1962 pp. 75

NIKANOROV, Vasiliy Alekseyevich, prof.; KUZNETSOV, Aleksey Kirillovich, dots.; POLYAKOV, P.Ya., red.

[Veterinary.surgery and orthopedia] Veterinarnaia khirurgiia 1 ortopediia. Leningrad, Kolos, 1965. 483 p. (MIRA 18:7)

ACC NR: AP7003299

(A)

SOURCE CODE: UR/0062/66/000/012/2073/2079

AUTHOR: Kuznetsov, A. K.; Kolor, E. K.

ORG: Institute of Silicate Chemistry im. I. V. Grebenshchikov, Academy of Sciences, SSSR (Institut khimii silikatov Akademii nauk SSSR)

TITLE: Rare earth zirconates and their physicochemical properties. Report No. 3: Some regularities of formation and physicochemical and technical properties of zirconates

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 12, 1966, 2073-2079

:TOPIC TAGS: zirconate, rare earth compound, physical chemistry property

ABSTRACT: The object of the study was to briefly expose certain regularities in the formation of rare earth zirconates and to compare their physicochemical and technical properties with the ionic radius and atomic number of the rare earth element in the periodic system. Complex, thermal, x-ray structural, chemical and microstructural analyses were employed. The mechanism of formation of the zirconates on coprecipitation from salt solutions is the same for all the rare earth oxides studied. The height of the peaks of the first exothermic effect due to crystallization of the rare earth zirconate from the amorphous coprecipitation product decreases in the series $12203 \rightarrow (CeO_2) \rightarrow Pr2O_3 \rightarrow Nd_2O_3 \rightarrow Sm_2O_3 \rightarrow Y_2O_3$. This corresponds to a decrease in the reactivity of these oxides as compared to zirconium dioxide. The latter apparently forms the compounds $1n_2Zr_2O_7$ (where In is a rare earth element) having the pyro-

Card 1/2

UDC: 541.4+546.831+546.65

ACC NR: AP7003299

chlore structure with all the exides of trivalent rare earth elements. With the exception of Ce₂Zr₂O₇, the zirconates studied are stable on heating in air. The physicochemical properties of rare earth zirconates (lattice parameter, x-ray density, specific gravity, refractive index and melting point) are closely related to the atomic number and the ionic radius of the rare earth element. Orig. art. has: 6 figures and 1 table.

SUB CODE: 07/ SUBM DATE: 02Jul64/ ORIG REF: 002/ OTH REF: 008

Card 2/2

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000928110014-5

USSR/Physical Chemistry, Thermodynamics, Thermochemistry, Equilibriums, Phys-Chem. Anal. Phase-Transitions.

B-8

Abs Jour : Ref Zhur - Khimiya, No 7, 1957, 22299.

Author

: E. K. Keler, A. K. Kuznetsov

Inst

: Not given

Title

: The application of a complex thermoanalysis to physico-

chemical and technical researches.

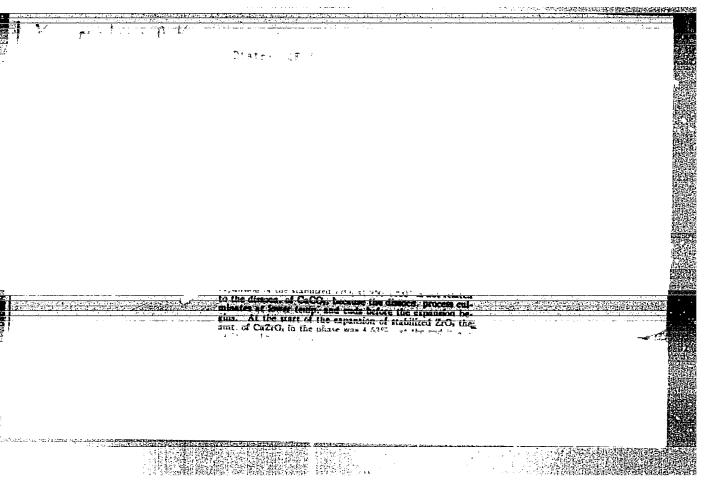
Orig Pub : Zh. neorgan. khimii, 1956, I, No 6, 1292-1295.

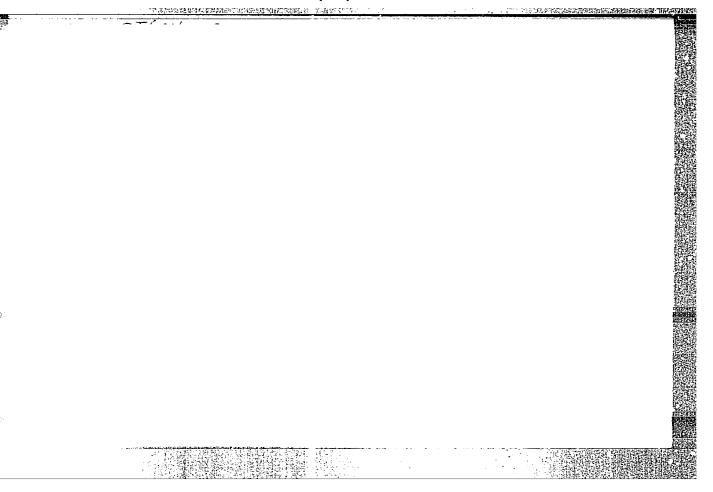
Abstract : A report on III Allunion conference on phys-chemical

analysis. (Moscow, 1955).

Card 1/1

-103-





SOV-120-58-1-36/43

AUTHORS: Kalinin, P. D. and Kuznetsov, A. K.

TITLE: Programmed Temperature Control (Programmnoye regulirovaniye temperatury)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 1, pp 136-137 (USSR)

ABSTRACT: A description is given of a relatively simple attachment to an electronic potentiometer which will give temperature control according to any preset law. The law is given by the shape of a thin metal foil or the profile of a thin wire as shown in Fig.1. A special contact is made to follow the outline of the specially prepared foil or wire. This motion is then transformed into an electric signal which is used to control the temperature of a furnace in the required manner. The electrical circuit is shown in Fig. 2. There are 3 diagrams and 2 English, 4 Soviet references.

ASSOCIATION: Institut khimii silikatov AN SSSR (Institute of the Chemistry of Silicates, Academy of Sciences of the USSR)

SUBMITTED: June 24, 1957.

1. Temperature--Control 2. Potentiqueters--Applications

3. Furnaces--Control systems

Card 1/1

ATTOTIOE: Inanctooy, A. Ke 504/78-3-3-20/28 TIPLE: II. The Effect of the Addition of Boron Anhydride on the Pareation of Cleium Mirconate (II. Thispania, Sale volumentogo and deid in the sevening vairtoner belityly) TERTONICA: Zburnal neorgenicheckov khimit, 1958, Vol. 1, 21. 3, pp. 1838-1845 (USER) ABUTHACT: The kinetics of the formation of calcium zirconate under the influence of mineralizary was investigated. The additions of number quantities of boric acid to the initial misture $\text{Caco}_3\text{-}\text{Zro}_2$ increase the reaction rate for the formation of colcium zirconate within the temperature range of from 200-1200°C. The addition of B.O. decreases the yield of colcium zirconate with solid solutions of colcium oxide forming in zirconium oxide. This effect is explained by the fact that B203 binds a part of the calcium oxide from the reaction mixture 0.00_3 - ${\rm ZrO}_2$ (1:1) under the formation of calcium borate. The boron anhydride addition considerably accreases the eintering temperature of calcium zirc mate (1150-1300°C). At these 0:rd 1/2

II. The 'ffect of the 'ddition of Boron Anhydride on the Formation of Calcium

temperatures a liquid phase is for od. The granular size of GaZrO_2 at 1150-1600°C is increased from 2 to 10 a.

les rediographic investigations of the mixture 3000 - 2r02 (1:1) with additions of boron ambulated were carried out. There are 7 figures, 2 tables, and 12 references, 6 of which are Soviet.

AS MODIATION: Institut Chimii silikatov Akademii neuk MOSR (Institute of Silicate Chemistry, AS FUSR)

SHRITTIND: June 10, 1957

Card 2/2

EUZNETSOV, A.K.

Reaction of calcium zirconate with the B₂O₃ mineralizer. Zhur. prikl.khim. 31 no.12:1799-1805 D 58. (MIRA 12:2)

1. Institut khimii silikatov AN SSSR.
(Calcium zirconate) (Boron oxides)

AUTHORS:

Kalinin, P. D., Kuznetnov. A. K.

507/76-32-7-30/45

TITLE:

An Automatic Recording Balance (Avtomaticheskiye registriruy-

ushchiye vesy)

PERIODICAL:

Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 7,

pp 1658 - 1660 (USSR)

ABSTRACT:

In the introduction some designs of balances for measurements according to Chevenard (Ref 9) and large thermal balances with a Kurnakov pyrometer are described. The authors describe an apparatus which automatically records the weight loss and the furnace temperature, and which consists of an analytical scale, a selenium photoelement FSS-3V, an electronic amplifier WA-109 a reversing motor RD-109, a potentiometer PP, an electronic double-point potentiometer RPP-09 and a furnace. From the schematic representation and the description may be seen that the photoelement is divided into two halves, by which means the balancing on a reduction of weight and increase of weight may be obtained. A platinum wire serves for the compensation of the weight changes; it is calibrated with analytical weights. Hence, the potentiometer is also calibrated in weight units. The measuring accuracy of the weight loss is given to be

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An Automatic Recording Balance

SOV/76-32-7-30/45

0.1g and less, the analytical scales having a sensitivity of 0.001 g. A diagram of the dehydration of boric acid is given as example, from which may be seen that the separation of water takes place in two stages; the first at $120-250^{\circ}$ and the second at $250-340^{\circ}$, which corresponds with data in publications. There are 3 figures and 11 references, 6 of which are Soviet.

ASSOCIATION:

Institut khimii silikatov, AN SSSR, Leningrad (Leningrad, Institute

of Silicate Chemistry, AS USSR)

SUBMITTED:

December 9, 1957

1. Balances--Design 2. Balances--Performance 3. Recording devices--Applications 4. Dehydrators--Control systems

5. Control systems -- Calibration

Card 2/2

KUZNETSOV, A. K.: Master Tech Sci (diss) -- "The conditions for the formation and sintering of calcium zirconate". Leningrad, 1959. 16 pp (Acad Sci USSR, Inst of the Chem of Silicates), 150 copies (KL, No 13, 1959, 106)

27910

15.2400

S/080/61/034/010/002/016 D231/D301

AUTHORS:

Keler, E. K., and Kuznetsov, A. K.

TITLE:

Synthesis and physical-technical properties of the

zirconates of strontium and barium

PERIODICAL:

Zhurnal prikladnoy khimii, v. 34, no. 10, 1961, 2146-2153

TEXT: The aim of the present work is to make a fuller study of Sr and Ba zirconates and of the properties of ceramics based on them. The basic methods used were those of complex thermal analysis, X-ray phase, chemical phase and microscopic analysis. Thermographic investigation of the formation of SrZrO₃ and BaZrO₃ shows individual peculiarities; for the mixture SrCO₃-ZrO₂ there are two endothermic effects; the first in the range 900-950°, corresponding to a polymorphic transition of SrCO₃ from a rhombic to a hexagonal form; the second at about 1190°, at which SrCO₃ dissociates. Loss of weight begins at 800° and proceeds very vigorously in the 900-1150°

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Synthesis and ...

range. For the mixture BaCO₃-ZrO₂, four endothermic effects are evidents the first two at 820° and 980°, corresponding to a polymorphic transition of BaCO₃; the third in the 1000-1260° range, due to dissociation of the BaCO₃; and the fourth with a temperature minimum at 1150° resulting from the fusion of basic BaO.BaCO₃ in the undissociated BaCO₃. Both the Sr and Ba compounds show increased volumes of the samples in the given temperature range. In the case of Sr, the increase takes place after decomposition of the SrCO₃, while with Ba the increase runs parallel with the dissociation of BaCO₃. Chemical analysis confirmed that there is a connection between volume increase and formation of the zirconate. At 900° (when volume increase commences) the percentage of SrZrO₃ present is 3.86, and at 1200° (temperature of maximum increase) this figure is raised to 72.9. Similar figures are shown for BaZrO₃ (at 900° - 15.8% and at 1050° - 63.9%). X-ray diffraction pattern analysis shows that formation of SrZrO₃ is practically.

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Synthesis and ...

complete at 1200° and that samples of the BaCO3-ZrO2 mixture fired at 1050° show diffraction patterns analogous to pure BaZrO3; their form is unchanged with a further rise of temperature. The chief proportion of SrZrO3 is formed in the first 15 minutes and equilibrium is reached in 1 hour. Similar results are recorded for BaZrO3. Articles made of Sr or Ba zirconates, even at high firing temperatures, have a high porosity, and an effective mineralizer was found in boric acid, previously described in literature. Addition of this agent lowered the sintering temperature and generally improved the ceramic properties of the "body," but it was discovered that boric acid lowered the percentage of zirconate and led to the formation of a solid solution (this in the case of CaZrO3). Additions of tristrontium borate and tribarium borate respectively to zirconates of Sr and Ba permits lowering of the sintering temperature of ceramics based on them by 200; they also improve their physical and technical properties. Sr and Ba zirconates with additions of mineralizers can find use not only in electro-ceramics, but also as high heat-resistance materials. There are Card 3/4

27910 S/080/61/034/010/002/016 D231/D301

Synthesis of ...

8 figures, 1 table and 14 references: 10 Soviet-bloc and 4 non-Soviet-bloc. The reference to the English-language publication reads as follows: P. S. Dear, Bl. Politech. Inst., 51 (8), Eng. exp. stand. ser., 126, 1-10 (1958).

SUBMITTED: December 29, 1961 / Abstractor's note: Misprint--1960 under-stood

K

Card 4/4

KUZNETSOV, A.K. (Leningrad)

Application of electronic potentiometers for recording curves of ordinary and complex thermal analysis. Zhur.fiz.khim. 35 no.12:2807-2810 D '61. (MIRA 14:12)

1. Institut khimii silikatov.
(Potentiometer) (Thermal analysis)

FAN' FU-KAN [Fan Fu-k'ang]; KUZNETSOV, A.K.; KELER, E.K.

Phase relations in the system Y203 - ZrO2. Report No.1: On the existence of yttrium zirconate and its physicochemical properties. Izv.AN SSSR.Otd.khim.nauk no.7:1141-1146 Jl 162. (MIRA 15:7)

1. Institut khimii silikatov AN SSSR.
(Yttrium oxide) (Zirconium oxide) (Phase rule and equilibrium)

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34968 \$/080/62/035/002/003/022 D204/D302

15,2210

AUTHORS:

Keler, E. K. and Kuznetsov, A. K.

TITLE:

The formation and physico-technical properties of

yttrium oxy-orthosilicate Y₂0.SiO₄

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 2, 1962, 250-256

TEXT: Y₂0₃.Si0₂ was prepared from Y₂0₃ (grain size 1 - 3/4) and crystobalite (3 - 6/4) by heating at 1100, 1200, 1300, 1400, 1500 and 1600°C for 2-hour periods, regrinding and reheating. The products were analyzed by chemical, X-ray and thermal methods. It was found that the yield of Y₂0₃.Si0₂ rose from 8.8% at 1200°C to 55.2% at 1500°C and was 93.0% at 1600°C. The reactions were slow up to 1300°C and fairly rapid, especially initially, above 1500°C. No appreciable thermal or volume changes were observed during the combination apart from the shrinkage due to sintering. Electron microscopy showed that the product formed a dense, adherent layer

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The formation and ...

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around the SiO₂ particle through which Y₂O₃ had to diffuse - this is regarded as the rate controlling process. After 2 hours at 1600°C the product retained 25.4% perosity which fell to 2.9% when the temperature was raised to 1800°C . 2% amounts of BaO, SrO, PbO, ZnO, B₂O₃, Bi₂O₃, Fe₂O₃, Al₂O₃, TiO₂, V₂O₅ and MoO₃ were added to mixutures sintered at 1600°C for 2 hours in an effort to produce a dense material. Alumina was found to give the best results (1.6% porosity), the optimum quantity being 1%. The action of Al₂O₃ is discussed. Electrical properties were measured on 25 mm dia. x 3 mm that Y₂O₃.SiO₂ is a semi-conductor, of resistivity = $4.76 \times 107 \Omega$ -cm. 2% additions of Al₂O₃, Bi₂O₃, Bi₂O₃ or ZnO increased this value to $1 - 4.78 \times 10^{10}$. The dielectric permeability was 17.9 without, nological properties of the compound is listed. The silicate is refractory to 1930°C and resists the attack of BeO, MgO, Al₂O₃, Card 2/3

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The formation and ...

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TiO2, ZrO, V2O5, MoO3 and SiC to, but not above, 1400°C. There are 6 figures, 3 tables and 10 references: 8 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: C. E. Curtis, J. Am. Cer. Soc., 40, 8, 274, (1957); R. Roy, Am. Cer. Soc. Bull., 38, 4, 169, (1959).

SUBMITTED: January 25, 1961

Card 3/3

L 17057-63 FCS(f)/EWP(q)/EWT(m)/BDS S/062/63/000/004/001/022
AFFTC/ASD Pad JD/HW/JG
AUTHOR: Fan Fu-k'ang, Kuznetosv, A. K., and Keler, E.K.

TITLE: Phase relations in the system Y₂0₃--Zr0₂. 2. Solid solutions

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk. no. 4, 1963, 601-610

TEXT: This article is based on the dissertation of Fan Fu-k'ang and was presented at the conference of the chief editors of journals of the Academy of Sciences USSR on 12 June 1952. Zirconium-yttrium solid solutions can be used possibly as solid electrolytes. However more data is needed on the Y203--ZrO2 system. A new diagram of state is proposed for the system Y203--ZrO in the solid phase characterized by the presence of Y2Zr2O7, absence of the single phase field of the monoclinical solid solution, different position of the phase boundaries of the sclid solutions in the system. It was noted that the minimum quantity of Y2O3 needed to completely stabilize ZrO2 depends on the annealing temperature to a considerable degree. A decrease in temperature during the

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Phase relations in the system....

polymorphous rearrangement of ZrO₂ calcined with small additions of stabilizing oxides can be explained by the change in the repelling force between cations in the lattice of ZrO₂ due to the formation of a monoclinical solid solution of ZrO₂ of the substitution type. The degree of temperature decrease of the polymorphism depends on the value of this change. There are 7 figures and 2 tables.

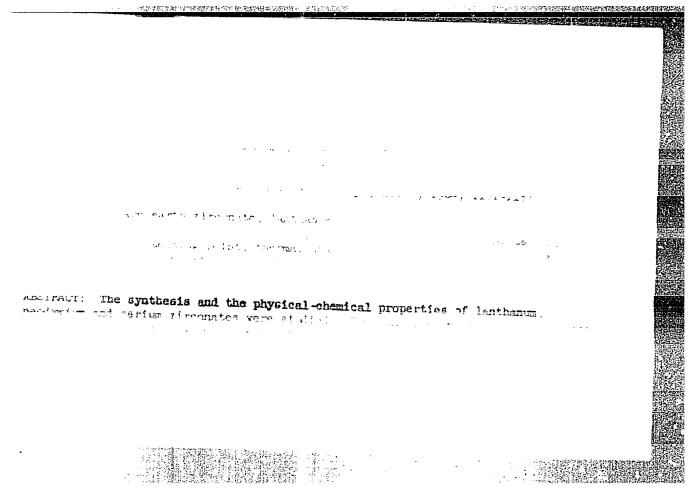
ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR (Institute of

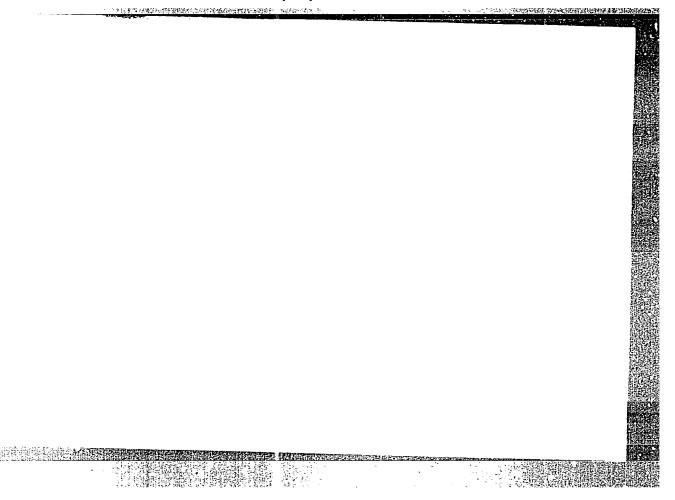
Chemistry of Silicates, Academy of Sciences USSR)

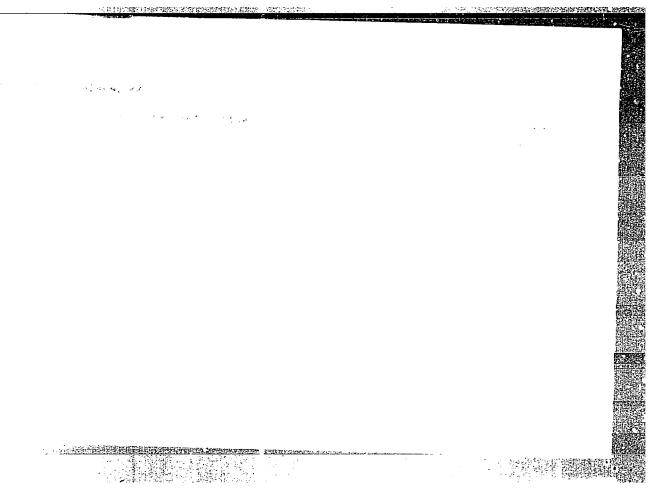
SUBMITTED: August 20, 1962

Card 2/2

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000928110014-5







5/0020/64/156/004/0865/0868

AUTHOR: Boykova, A. I.; Toropov, N. A. (Corresponding member); Kuznetsov, A. K. ACCESSION NR: AP4041154

TITIE: Rare earth silicates as crystallochemical indicators. Solid solutions of tricalcium silicate with lanthamum oxyorthosilicate

SOURCE: AN SSSR. Doklady*, v. 156, no. 4, 1964, 865-868

TOPIC TAGS: tricalcium silicate, lanthanum oxyorthosilicate, 3CaO.5iO sub 2, La sub 2 0 sub 3 .510 sub 2, solubility, solid solution, rare earth silicate, crystal. lochemical indicator, x ray analysis, crystallooptical analysis, differential thermal analysis, isomorphism, polymorphic transition, beta 20a0.810 sub 2, gomma 2CaO.SiO sub 2, heat treatment

ABSTRACT: Compositions of 3CaO.8102 with 1-25% La₂O₃.8102 were subjected to crystallooptical, x-ray, differential thermal and chemical analyses. The apparent limit of solubility of Le₂O₃.8iO₂ in the 3CaO.8iO₂ is 5%, but an increase in light refraction was noted as the former was increased to 12%, indicating that saturation of the solid solution continues beyond the limit of phase homogeneity (but the process is slow in attaining equilibrium) and the limit of the solid solution is

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ACCESSION NR: AP4041154

somewhat higher than 5% La₂O₃.SiO₂. Beta- and gamma- 2CaO.SiO₂ were present in all the samples along with the solid solution, their amount increasing with an increase in La₂O₃.SiO₂ content. This is explained by the isomorphic exchange 3Ca 2 2La 3. The larger the amount of the La₂O₃.SiO₂, the greater the number of Ca vacancies and the greater the amount of Ca above the stoichicmetric 3:1; 3-4% excess CaO over the stoichicmetric was found. The formation of the solid solution is a complex process involving introduction of Ca ions into the lattice to fill the vacancies as well as substitution by La ions. Differential thermal analysis showed the complex polymorphic transformations depended on La₂O₃.SiO₂ concentration and leffects in the 800-1000C range as pure 3CaO.SiO₂, shifted somewhat toward lower temperatures with increase in La₂O₃.SiO₂ content; the hardened compositions containing over 3% La₂O₃.SiO₂ and additional endothermic effect appears. Examination of the intensity of the x-ray ionization curves showed the triplet lines characteristic of 3CaO.SiO₂ appeared in annealed lanthanum-containing compositions, but the maxima shifted and the aspect of the lines changed with increasing figures.

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000928110014-5

ACCESSION NR: AP4041154 ASSOCIATION: Institut khimii silikatov, Akademii nauk SSSR (Institute of Silicate Chemistry Academy of Sciences SSSR) SUBMITTED: 14Feb64 DATE ACQ: 00 ENCL: 00 SUB COOR: GC, IC NO REF SOV: 004 OTHER: 003		。 一种,一种,一种,一种,一种,一种,一种,一种,一种,一种,一种,一种,一种,一
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FAN' FU-KAN [an Fu-k'ani]; KUZNETSOV, A.K.; KELER, E.K.

Rare-earth zirconates and their physicochemical properties
Report No.2: Praseodymium zirconate Pr2Zr2O7. Izv. AN SSSR.
Ser. kiim. no.4:585-588 '65. (MIRA 18:5)

1. Institut khimii silikatov im. I.V.Grebenshchikova AN SSSR.

KUZNETSOV, A.L., podpolkovnik; VERZHBITSKIY, V.G., polkovnik, red.

[Hero of the Soviet Union Andrei Efimovich Chertsov] Geroi Sovetskogo Soiuza Andrei Efimovich Chertsov. Moskva, 1960. 15 p. (MIRA 14:2)

1. Moscow. TSentral'nyy musey Sovetskoy Armii. (Chertsov. Andrei Efimovich, 1917-)

ARSENIN, N.D.; BUDKOVSKIY, N.G.; BOLOTIN, A.A.; BONARTSEVA, N.N.;
BOCDANOVA, M.V.; GOLOVENKO, I.P.; IL'BITENKO, K.I.;
KIRPONOS, Ye.M.; KARAPETYAN, K.G.; KIRSANOVA, I.A.;
KUZNETSOV, A.L.; KORESHNIKOVA, N.F.; KORZHENEVSKAYA, T.I.;
NEMIROV, N.G.; NIKONOVA, T.K.; NAZAROV, V.N.; PISAREVA, I.A.;
POPOV, S.A.; PRONINA, N.A.; PAKHMAN, M.Ye.; REYPOLSKIY, S.N.;
ROGACHEV, Yu.N.; SOSNINA, V.D.; STARSHINOV, B.M.; KHUDYAKOV,
B.Ya.; SHELEKASOV, V.I.; PARKOV, V.P., podpolkovnik, red.;
MURAV YEV, A.I., polkovnik, red.; CHAPAYEVA, R.I., tekhn. red.

[Relics of military glory]Relikvii boevoi slavy. Moskva, Voenizdat, 1962. 166 p. (MIRA 15:8)

1. Nauchnyye sotrudniki TSentral'nogo muzeya Sovetskoy Armii (for all except Murav'yev, Chapayeva).

(Military museums)

AUTHORS:

Dorfman, L.A., Candidate of Physicomathematical

Sciences and Kuznetsov, A.L., Engineer

TITLE:

Influence of Water Injection on the Intake of the

Axial-flow Compressor of a Gas Turbine

PERIODICAL: Energomashinostroyeniye, 1960, No. 4, pp. 12 - 15

TEXT: A compressor output may be increased by wet compression. Injection of a water spray into the compressed air causes the compression process to approach the isothermal, so that the work required to compress l kg of air becomes appreciably less than under ordinary conditions. Calculations show that wet compression permits considerable reduction in machine size for a given effective output and if regeneration is used there is an appreciably lower heat consumption for power generation. However, wet compression requires considerable quantities of pure water which is subsequently discharged to atmosphere. Saturated wet compression is, however, an ideal case. In practice, the water drops may be in the Card 1/6

Influence of Water Injection on the Intake of the Axial-flow Compressor of a Gas Turbine

compressor for only about 0.015 sec, and because of this shorttime and the small temperature difference between the drop and the surrounding gas the actual process of wet compression may be very different from the ideal. A method of calculating this difference is briefly described. The effectiveness of wet compression is also impaired by uneven distribution of water drops over the height of the blades resulting from centrifugal force, by impact between the drops and blade surface, and by contamination of the blading by deposits from the water. To make the best use of wet compression it is necessary to have a specially designed meridional profile of the blading. Work on water injection in the axial-flow compressor of a gas turbine has been described by the Allis Chalmers Company. The hard water used gave considerable deposits on the blading. In view of the lack of experimental data confirming the effectiveness of water injection in an axial-flow compressor

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Influence of Water Injection on the Intake of the Axial-flow Compressor of a Gas Turbine

tests were carried out on the experimental gas turbine type \(\text{TT-550}\) (GT-550) of the Nevskiy mashinostroitel nyy zavod (Neva Engineering Works). The axial compressor of this set has 16 stages with 50% reaction, and a stage compression ratio of 3.6; the output is 100 t/h. Water is injected through five mechanical nozzles with a total flow of 1 348 kg/h. The mean drop diameter was estimated to be 40 \(\text{\pi}\). The distribution of water droplets across the section was studied by measuring the temperature distribution along the radius in several stages, using thermocouples. The graphs show the characteristic bend in the temperature distribution along the blade height. It is due to centrifugal displacement of the water droplets to the periphery, which is accordingly best cooled. There is also a low-temperature zone near the blade roots, where water comes into direct contact with the rotor body and the blade roots. Accordingly, the concentration of

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water droplets is not uniform over the stage section, which reduces the effectiveness of wet compression. Measurements were made to show changes in the isoentropic efficiency of wet compression. The formulae used are given and the results are plotted. It is found that there is appreciable reduction in efficiency from this cause. Nevertheless, the work expended in compressing one kg of air is lower for wet compression than for dry, even in the worst case. The increase in output of the compressor is also greater than the amount of water injected. This means that the compressor output is increased by wet compression. After fifty hours of operation with water injection the compressor efficiency measured with dry compression was reduced from 85 to 83% as a result of deposit formation from the water on the blades; later, the rate of efficiency drop diminished. The water hardness was 65 mg/litre. Analysis Card 4/6

Influence of Water Injection on the Intake of the Axial-flow Compressor of a Gas Turbine

showed that only half the deposits were water-scluble, so washing would be of little use; part of the decosits result from pick-up of oil and from dust in the air. Very slight erosion was observed in the first stage, evidently because the water-particle sizes were not all small enough. From the test results given it is possible to construct compressor characteristics for various amounds of water injection and to calculate the effect of injection on the operation of the gas turbine set as a fine. Calculated curves of power increase and efficiency as compared with dry compression are potted and the experimental points were close to these curves. It is shown that the greatest increase in output and efficiency is observed with relatively small amounts of water injection, because under such circumstances the isoentropic efficiency of wet compression is reduced comparatively litte. Accordingly, the tests have

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Influence of Water Injection on the Intake of the Axial-flow Compressor of a Gas Turbine

demonstrated the possibility of increasing the output of a gas turbine by injecting water into the compressor intake. The possibilities of such power increases are greatly limited by the reduction in axial velocity of the last stages. When the air temperature is below or near freezing point, water cannot be injected because of icing in the first stages but in hot dry regions, water/may be particularly effective. For example, with an air temperature of 35 °C and relative humidity of 40% treatment which reduces the air temperature to 27.2 °C increases the output of the turbine by about 7%. There are 6 figures, 1 table and 8 references: 3 Soviet and 5 non-Soviet.

Acknowledgments are expressed to Candidate of Technical Sciences L. A. Kuznetsov for directing the work and to Engineers K. G. Shkutov, G. A. Kruglikov, L. I. Merkis and A. C. Lebedev for their assistance.

Card 6/6

DORFMAN, L.A., kand.fiziko-matematicheskikh nauk; KUZNETSOY, A.L., inzh.

Review of I.T.Shvets and B.P.Dyban's book "Air cooling of gas-turbine rotors." Energomashinostroenie 6 no.3:40-45 Mr 160. (MIRA 13:6)

(Gas turbines-Gooling) (Shysts, I.T.) (Dyban, E.P.)

84912

\$/096/60/000/011/003/018

E073/E135

26.2120 Kuznetsov, A.L. (Engineer) AU THOR:

TITLE:

Increasing the Power of a Gas Turbine Installation by

Injecting Water into the Combustion Chamber

PERIODICAL: Teploenergetika, 1960, No 11, p 40

TEXT: Experiments were carried out on increasing for short durations the power output of an experimental TT -550 (GT-550) gas turbine above that attainable for a given maximum gas temperature. The installation consisted of a 5-stage turbine, a 16-stage axial compressor with a steep characteristic, a 3-way combustion chamber with a petal-shaped mixer and a tubular regenerator. The compression ratio was 3.6 with a delivery GB equalling 100 lb/hr. The regeneration factor $\mu = 0.33$, and the power output was 1000 kW for 5000 r.p.m. The relative turbine output was 1000 kW for 5000 r.p.m. The relative turbine efficiency η_T = 0.84, and the compressor efficiency $\eta_{ad.c}$ = 0.85. For the purpose of injecting the water into the combustion chamber four mechanical nozzles with a maximum total water delivery of 2100 kg/hr were fitted, in addition to five fuel nozzles, in such a way that evaporation of the water drops took place in the focus of The performance and the fuel consumption (B) the combustion zone. Card 1/3

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S/096/60/000/011/003/018 E073/E135

Increasing the Power of a Gas Turbine Installation by Injecting Water into the Combustion Chamber as a result of water injection were determined by calculation and It was found that for all conditions of water injection the combustion was stable and no flame pulsations Special chemical analysis of the gases emanating from the combustion chamber for CO and $C_{n}H_{m}$ contents for a water/fuel consumption ratio of 2.35% showed absence of incomplete According to calculated and experimental results, for a 1% water injection the increase in power is 7.6% if the temperature of the gas at the turbine input to is 500 °C, the water is 625 °C, and 4-5% if the temperature is 625 °C. 700 oc (the value of 6.4% at 625 oc is quoted from BBC Mitteilungen Thus the increase in power is greater at lower gas temperatures. The problem of salt deposition on the turbine blade and suitable water treatment will have to be clarified during practical operation. A graph is included of the relative increase of the power and the fuel consumption as a function of the amount of water injected into the combustion chamber for a constant temperature t₁ = 500 °C, and also a graph showing Card 2/3